STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0049531
Owner:	City of Kansas City (KC)
Address:	414 East 12th Street, 5th Floor, Kansas City, MO 64106
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	KC, Birmingham Sewage Treatment Plant
Facility Address:	10801 NE 28th Street, Kansas City, MO 64161
Legal Description:	NE ¼, SW ¼, Sec. 13, T50N, R32W, Clay County
Latitude/Longitude:	+3908292/-09426518
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P)(00226)
USGS Basin & Sub-watershed No.:	(10300101-040002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

January 25, 2002 — Effective Date
February 22, 2002 — Revised
January 24, 2007 — Expiration Date

Stephen M. Mahfood, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

Interim Director of Staff, Clean Water Commission

MO 780-0041 (10-93)

FACILITY DESCRIPTION (continued)

Outfall #001 – POTW - SIC #4952
Activated sludge/aerobic digester/sludge holding basins/sludge is land applied.
Design population equivalent is 100,000.
Design flow is 20.0 MGD.
Actual flow is 10.0 MGD.
Design sludge production is 21,000 dry tons/year.
Actual sludge production is 6,000 dry tons/year.

Outfall #006 – Ground water monitoring wells:
Upgradient(background)wells #1, 18, 32, and 33.
Internal wells at land application sites #2, 20, 22, 24, and 31.
Internal wells adjacent to sludge storage lagoons #16, 17, 28, 29, and 30.
Downgradient wells #3, 4, 26, and 27.

ADDITIONAL FACILITY DESCRIPTION FOR OUTFALL #001

Sludges from Birmingham, Westside, and Blue River Sewage Treatment Plants are anaerobically digested at the Blue River Sewage Treatment Plant. Sludge from other facilities may also be land applied (Special Conditions). The sludge is then pumped to sludge holding basins at Birmingham for land application. The total design sludge quantity to be land applied at Birmingham is approximately 21,000 dry tons/year.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/daily	24 hr. estimate
Biochemical Oxygen Demand$_5$***	mg/L		45	30	once/weekday**	24 hr. composite
Total Suspended Solids***	mg/L		45	30	once/weekday**	24 hr. composite
Oil and Grease	mg/L		20	15	once/month	grab
pH – Units	SU	****		****	once/weekday**	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE March 28, 2002.						
Whole Effluent Toxicity (WET) Test	% Survival	(See Special Conditions)			once/year	24 hr. composite
Total Toxic Organics (Note 1)	mg/L		*	*	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2002.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #006 - Downgradient Groundwater Monitoring Wells: #3, 4, 26, and 27 (Note 2)						
Water level below ground surface	feet	*		*	once/month*****	measured
Total Suspended Solids	mg/L	*		*	once/month*****	grab
Total Dissolved Solids	mg/L	*		*	once/month*****	grab
Nitrate – N	mg/L	*		*	once/month*****	grab
Ammonia – N	mg/L	*		*	once/month*****	grab
Total Nitrogen – N	mg/L	10			once/month*****	grab
Fecal Coliform	#/100mL	*		*	once/month*****	grab
pH - Units	SU	****		****	once/month*****	grab
Chlorides	mg/L	250		*	once/month*****	grab
Aluminum, Total Recoverable	mg/L	*			once/year*******	grab
Aluminum, Dissolved	mg/L	*			once/year*******	grab
Arsenic, Total Recoverable	mg/L	0.05			once/year*******	grab
Cadmium, Total Recoverable	mg/L	0.005			once/year*******	grab
Copper, Total Recoverable	mg/L	1.3			once/year*******	grab
Chromium, Total Recoverable	mg/L	0.1			once/year*******	grab
Lead, Total Recoverable	mg/L	0.015			once/year*******	grab
Mercury, Total Recoverable	mg/L	0.002			once/year*******	grab
Nickel, Total Recoverable	mg/L	0.1			once/year*******	grab
Selenium, Total Recoverable	mg/L	0.05			once/year*******	grab
Zinc, Total Recoverable	mg/L	5.0			once/year*******	grab
Sulfates	mg/L	250			once/year*******	grab

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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #006 - Internal Groundwater Monitoring Wells #2, 16, 17, 20, 22, 24, 28, 29, 30 & 31						
Water level below ground surface	feet	*		*	once/quarter******	measured
Total Suspended Solids	mg/L	*		*	once/quarter******	grab
Total Dissolved Solids	mg/L	*		*	once/quarter******	grab
Nitrate – N	mg/L	*		*	once/quarter******	grab
Ammonia – N	mg/L	*		*	once/quarter******	grab
Total Nitrogen – N	mg/L	*			once/quarter******	grab
Fecal Coliform	#/100mL	*		*	once/quarter******	grab
pH - Units	SU	*		*	once/quarter******	grab
Chlorides	mg/L	*		*	once/quarter******	grab
Aluminum, Total Recoverable	mg/L	*			once/year*******	grab
Aluminum, Dissolved	mg/L	*			once/year*******	grab
Arsenic, Total Recoverable	mg/L	*			once/year*******	grab
Cadmium, Total Recoverable	mg/L	*			once/year*******	grab
Copper, Total Recoverable	mg/L	*			once/year*******	grab
Chromium, Total Recoverable	mg/L	*			once/year*******	grab
Lead, Total Recoverable	mg/L	*			once/year*******	grab
Mercury, Total Recoverable	mg/L	*			once/year*******	grab
Nickel, Total Recoverable	mg/L	*			once/year*******	grab
Selenium, Total Recoverable	mg/L	*			once/year*******	grab
Zinc, Total Recoverable	mg/L	*			once/year*******	grab
Sulfates	mg/L	*			once/year*******	grab

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2002.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #006 - Upgradient (Background) Groundwater Monitoring Wells #1, 18, 32, and 33 (Note 3)						
Water level below ground surface	feet	*		*	once/month*****	measured
Total Suspended Solids	mg/L	*		*	once/month*****	grab
Total Dissolved Solids	mg/L	*		*	once/month*****	grab
Nitrate – N	mg/L	*		*	once/month*****	grab
Ammonia – N	mg/L	*		*	once/month*****	grab
Total Nitrogen – N	mg/L	*		*	once/month*****	grab
Fecal Coliform	#/100mL	*		*	once/month*****	grab
pH - Units	SU	*		*	once/month*****	grab
Chlorides	mg/L	*		*	once/month*****	grab
Aluminum, Total Recoverable	mg/L	*			once/month*****	grab
Aluminum, Dissolved	mg/L	*			once/month*****	grab
Arsenic, Total Recoverable	mg/L	*			once/month*****	grab
Cadmium, Total Recoverable	mg/L	*			once/month*****	grab
Copper, Total Recoverable	mg/L	*			once/month*****	grab
Chromium, Total Recoverable	mg/L	*			once/month*****	grab
Lead, Total Recoverable	mg/L	*			once/month*****	grab
Mercury, Total Recoverable	mg/L	*			once/month*****	grab
Nickel, Total Recoverable	mg/L	*			once/month*****	grab
Selenium, Total Recoverable	mg/L	*			once/month*****	grab
Zinc, Total Recoverable	mg/L	*			once/month*****	grab
Sulfates	mg/L	*			once/month*****	grab

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2002,. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.
** Once per weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
*** This facility is required to meet a removal efficiency of 85% or more.
**** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
***** Once per month in the months of March through November.
****** Once per quarter in the months of March, June, September, and November.
******* Once per year in the month of March.

Note 1 – See Total Toxic Organics (page 13).

Note 2 – The pollutant concentrations in the downgradient wells shall not exceed the higher of the following:

a) The listed permit limit(s)
b) A concentration that is not statistically higher than the concentration in the upgradient wells during the same monitoring period for the 80% confidence level using the Students T test. Option (b) will apply when the upgradient wells exceed the listed permit limitation(s). If the upgradient wells are not installed by the first monitoring period, or upgradient well data is not available for any other reason, option (a) will apply.

Note 3 – Upgradient wells #1, 18, 31, and 32 shall be monitored for comparison to downgradient wells.

C. SCHEDULE OF COMPLIANCE

1. By September 1, 2002 permittee shall submit plans for the renovation of lagoon #3 to the Kansas City Regional Office.

2. By September 1, 2002 permittee shall submit plans for water monitoring on the surface water that leaves the northeast corner of the facility property.

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

D. SPECIAL CONDITIONS

3. Whole Effluent Toxicity (WET) tests will be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
001	10%	Annually	24 hr. comp.	June

a. Test Schedule and Follow-Up Requirements

(1) Perform a single-dilution test in the months and at the frequency specified above.

If the test passes the effluent limit do not repeat test until the next test period. Submit results with the annual report.
If the test fails the effluent limit a multiple dilution test shall be performed within 30 days, and biweekly thereafter until one of the following conditions are met:

(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(2) The permittee shall submit a summary of all test results for the test series to the Planning Section of the WPCP, DNR, Box 176, Jefferson City, MO within 14 days of the third failed test. DNR will contact the permittee with initial guidance on conducting a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE). The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 days of the date of DNR's letter. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(3) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(4) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in part b.(1) will be required during this period.

(5) In addition to the WET test summary report required in part (2), all failing test results shall be reported to DNR within 14 days of the availability of results.

(6) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October. When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

D. SPECIAL CONDITIONS (continued)

3. Whole Effluent Toxicity (WET) tests (continued)

b. PASS/FAIL procedure and effluent limitations

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:

(a) the computed percent effluent at the edge of the zone of initial dilution (AEC) must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms, or,
(b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is considered an effluent limit violation.

c. Test Conditions

(1) Test species: Ceriodaphnia dubia and fathead minnows, Pimephales promelas. Organisms used in WET testing should come from cultures reared for the purpose of conducting toxicity tests and should be cultured in a manner consistent with the most current USEPA guidelines. All test animals should be cultured as described in EPA-600/4-90/027.

(2) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(3) When dilutions are required, upstream receiving stream water will be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used. Procedures for generating reconstituted water will be supplied by the Department of Natural Resources (DNR).

(4) Tests should be initiated immediately after the sample is collected, but tests must be initiated no later than 36 hours after collection.

(5) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

(6) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC.
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

D. SPECIAL CONDITIONS (continued)

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

(5) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
(5) One hundred micrograms per liter (100 ug/L);
(5) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
(5) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
(5) The level established in Part A of the permit by the Director.

(5) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

(a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
(b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
(c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
(d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
(e) There shall be no significant human health hazard from incidental contact with the water;
(f) There shall be no acute toxicity to livestock or wildlife watering;
(g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
(h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.

8. Permittee shall amend its ordinances as necessary to comply with the current requirements of 40 CFR 403.8 and any subsequent revisions. The Department must review and approve these amendments as required by 40 CFR 403.18.

D. SPECIAL CONDITIONS (continued)

9. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

(a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
(b) The facility is authorized to receive treated sludge from other facilities operated by the permittee for final disposal by land application. The permit facility description includes the total amount of all sludge to be land applied at the Birmingham facility.
(c) Surface application or irrigation of water decanted from sludge lagoons, is permitted provided it is tested using the same parameters as treated sludge and shall comply with metals, fecal coliform and vector attraction reduction standards, and nitrogen loading limitations.
(d) Sampling frequency of the Birmingham sludge holding basins shall be based on actual sludge quantity that is land applied. Sludge monitoring requirements shall be performed in accordance with the University of Missouri WQ 423 guide. Sludge samples shall be collected from the land application pumping station during land application periods. Sample frequency shall be 12 times per year at current sludge production and 52 times per year at design capacity.
(e) The facility is granted an exception to the soil pH limitations in WQ 426 due to naturally occurring soil pH levels. Biosolids may be applied on land with salt based pH greater that 7.5, but not to exceed 8.5. Aluminum monitoring in sludge and soils shall be conducted annually and shall not exceed 4,000 pounds per acre in addition to background soil levels. Permittee shall submit results of all sludge and soil monitoring to the MDNR, Kansas City Regional Office by January 28th of each year for the previous year.
(f) Land application of biosolids shall not occur within one hundred feet (100') of upgradient groundwater monitoring wells and within fifty feet (50') of all other monitoring wells.
(g) Stormwater diversion ditches shall be maintained to prevent runoff from City property onto privately owned farmland located south of the west storage lagoon.

10. Permittee shall submit to the Department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:

(a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;

(b) A summary of the status of Industrial User compliance over the reporting period;

(c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and

(d) Any other relevant information requested by the Department.

11. Permittee is authorized to process (i.e. chip and/or grind) and store yard waste at the facility for purposes of land application at the facility. This permit does not authorize composting of yard waste or biosolids or burning of yard waste.

12. The permittee is authorized to undertake various silviculture activities at this site as part of innovative biosolids management efforts. These silviculture activities will include the use of tree species suited to the soil and site conditions

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless otherwise specified by MDNR, procedures should be consistent with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA/600/4-90/027.

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at p# 0.05)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at p# 0.05)
Test Acceptability criterion:	90% or greater survival in controls

Total Toxic Organics (Note 1)
Acenaphthene
Acrolein
Acrylonitrile
Benzene
Benzidine
Carbon Tetrachloride (tetrachloromethane)
Chlorobenzene
1,2,4-trichlorobenzene
Hexachlorobenzene
1,2-dichloroethane
1,1,1-trichloroethane
Hexachloroethane
1,1-dichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
Chloroethane
Bis (2-chloroethyl) ether
2-chloroethyl vinyl ether
N-nitrosodi-n-propylamine
Pentachlorophenol
Phenol
Bis (2-ethylhexyl) phthalate
Butyl benzyl phthalate
(dibenzo(a,h)anthracene)
Di-n-butyl phthalate

Di-n-octyl phthalate
Diethyl phthalate
Dimethyl phthalate
1,2-benzanthracene (benzo(a)anthracene)
Benzo(a)pyrene (3,4-benzopyrene)
3,4-benzofluoranthene (benzo(b)fluoranthene)
11,12-benzofluoranthene (benzo(k)fluoranthene)
Chrysene
metabolites)
Anthracene
1,12-benzoperylene (benzo(ghi)perylene)
Fluorene
2-chloronaphthalene
2,4,6-trichlorophenol
Parachlorometa cresol
Chloroform (trichloromethane)
2-chlorophenol
1,2-dichlorobenzene
1,3-dichlorobenzene
hexachlorocyclohexane)
1,4-dichorobenzene
3,3-dichlorobenzidine
1,1-dichloroethylene
1,2-trans-dichloroethylene
2,4-dichlorophenol
1,2-dichloropropane (1,3-dichloropropane)
2,4-dimethylphenol
2,4-dinitrotoluene
2,6-dinitrotoluene
1,2-diphenylhydrazine
Ethylbenzene
Fluoranthene
4-chlorophenyl phenyl ether
4-bromophenyl phenyl ether
Bis (2-chloroisopropyl) ether
Bis (2-chloroethoxy) methane
Methylene Chloride (dichloromethane)
Methyl Chloride (chloromethane)
Methyl bromide (bromomethane)
Bromoform (tribromomethane)
Dichlorobromomethane
Chlorodibromemethane
Hexachlorobutadiene
Hexachlorocyclopentadiene
Isophorone
Naphthalene
Nitrobenzene
2-nitrophenol
4-nitrophenol
2,4-dinitrophenol
4,6-dintro-o-cresol
N-nitrosodimethylamine
N-nitrosodiphenylamine
Phenanthrene
1,2,5,6-dibenzanthracene

Indeno (1,2,3-cd) pyrene
(2,3-o-phenylene pyrene)
Pyrene
Tetrachloroethylene
Toluene
Trichloroethylene
Vinyl Chloride (chloroethylene)
Aldrin
Dieldrin
Chlordane (technical mixture and

4,4-DDT
4,4-DDE (p,p-DDX)
4,4-DDD (p,p-TDE)
Alpha-endosulfan
Beta-endosulfan
Endosulfan sulfate
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide (BHC

Alpha-BHC
Beta-BHC
Gamma-BHC
Delta-BHC (PCB polychlorinated biphenyls)
PCB-1242 (Arochlor 1242)
PCB-1254 (Arochlor 1254)
PCB-1221 (Arochlor 1221)
PCB-1232 (Arochlor 1232)
PCB-1248 (Arochlor 1248)
PCB-1260 (Arochlor 1260)
PCB-1016 (Arochlor 1016)
Toxaphene

Date of Fact Sheet: December 30, 1998

Date of Public Notice: April 28, 2000

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
FACT SHEET

This Fact Sheet explains the applicable regulations, rationale for development of this permit and the public participation process.

NPDES PERMIT NUMBER: MO-0049531

FACILITY NAME: KC, Birmingham Sewage Treatment Plant

OWNER NAME: City of Kansas City

LOCATION: NE ¼, SW ¼, Sec. 13, T50N, R32W County: Clay

RECEIVING STREAM: Missouri River

FACILITY CONTACT PERSON: Bob Williamson TELEPHONE: (816) 231-8373

FACILITY DESCRIPTION AND RATIONALE

The City of Kansas City (the City) has requested modification of the Missouri State Operating Permit for their Birmingham Sewage Treatment Plant. The City and the MDNR have discussed and negotiated the details of the requested modification. This draft permit represents the proposed modified permit.

The proposed modifications include:

1. Modifying the monitoring periods, frequencies, and limits for the groundwater monitoring wells at the facility.
2. Adding a Schedule of Compliance, which requires the City to repair a sludge holding lagoon known to be seeping, test other sludge lagoons at the facility for seepage, install new groundwater monitoring wells, and close groundwater monitoring wells suspected of being improperly placed or constructed.

Rationale for groundwater limits are as follows:

Limits for all metals, chlorides, sulfates, and pH are taken directly from 10 CSR 20-7.031, “Water Quality Standards,” using the protection of drinking water and/or groundwater criterion.

The limit for total nitrogen is based upon the water quality standard for nitrate as nitrogen in groundwater. Based upon the last two years of monitoring, other forms of nitrogen are believed to be insignificant, especially with respect to groundwater quality, but will be monitored.

The previous limit for fecal coliform is proposed to be deleted due to poor sampling conditions, mainly difficulty in keeping sampling equipment and well casings sterile.

Monitoring for aluminum will continue as “Monitoring Only” due to the erratic results from the previous two years of monitoring. “Monitoring Only” for dissolved aluminum is also being added for comparison to total recoverable levels.

Monthly monitoring for parameters at upgradient groundwater monitoring wells is being required for the life of the permit in order to accumulate sufficient data on the wells for statistical comparison to downgradient wells.

This permit will be issued for a period of five years.